**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
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| Amendment of Part 22 of the Commission's | ) | |
| Rules to Benefit the Consumers of | ) | |
| Air-Ground Telecommunications Services | ) | WT Docket No. 03-103 |
| | ) | |
| Biennial Regulatory Review–Amendment | ) | |
| of Parts 1, 22, and 90 of the Commission's | ) | |
| Rules | ) | |

To: The Commission

**COMMENTS OF AIRCELL, INC.**

AirCell, Inc. ("AirCell"), by its attorneys, hereby submits these comments in response to the Commission's Notice of Proposed Rulemaking ("NPRM") in the above-captioned docket.1/ The NPRM initiated a broad reexamination of the Commission's rules governing service in the commercial air-to-ground ("ATG") band at 849-851/894-896 MHz. The NPRM sought comment on possible means for increasing the efficient use of the band that will provide lower prices and increased choices for consumers.2/ As discussed below, AirCell urges the Commission to: (1) maintain the ATG band for exclusive air-ground use; (2) continue to explore options for increasing operational flexibility in the band without

1/ *See* Amendment of Part 22 of the Commission's Rules to Benefit the Consumers of Air-Ground Telecommunications Services, WT Docket No. 03-103, *Notice of Proposed Rulemaking*, FCC 03-95 (rel. Apr. 28, 2003) ("NPRM").

2/ *See* NPRM at ¶ 17.

taking any action that would lead to anti-competitive or restrictive entrenchment of the current incumbent; and (3) modify Section 22.925 to permit the airborne use of non-interfering cellular handsets.

## I. THE COMMISSION CORRECTLY RECOGNIZES THAT THE CURRENT RULES SHOULD BE REFORMED TO PROMOTE MORE EFFICIENT USE OF THE ATG BAND

The Commission stated in the NPRM that its current air-ground rules "may be impeding the efficient, competitive provision of services to the public," and that "current market and technical developments strongly suggest that there may be significant consumer benefits from changing our existing regulatory framework."3/ AirCell strongly agrees.

In a band that offered the potential for six service providers, only three ever became operational. Now, after the market exit of two licensees, 60% of commercial aircraft no longer have air-ground communications service available to passengers. Currently, only one carrier, Verizon Airfone ("Airfone"), remains licensed to operate in the ATG band as a monopoly provider, with current pricing4/ leading to low utilization rates by the flying public. The spectrum clearly is not being used efficiently.

The Commission is to be commended for taking the initiative to consider a fundamental reform of its rules, which will undoubtedly be needed to revitalize the band and to ensure its efficient use. The Commission needs to adopt

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3/ NPRM at ¶¶ 5, 12.

4/ For example, under Airfone's current pricing scheme, a customer placing a short, one-minute call would incur a charge of $7.98.

an approach that leads to a fully utilized, technologically advanced, cost competitive system with more than one provider and broader capability to serve passengers. As a provider of voice and data service to the general and commercial aviation markets with considerable experience in telecommunications and aviation,5/ AirCell looks forward to being an active participant in this ongoing discussion.

## II. THE ATG BAND SHOULD BE PRESERVED FOR AIR-GROUND SERVICE ONLY

Keeping in mind the goal of "promoting the highest valued use of the spectrum, with service that better meets the needs of the public,"6/ the NPRM sought comment on whether terrestrial services should also be permitted in the ATG band.7/ AirCell strongly believes that the full four megahertz of spectrum should remain dedicated for air-ground service only (including possible non-interfering ancillary terrestrial use by the ATG licensees). While the ATG band certainly should be – and can be – used more efficiently, the current lack of utilization in the band should not be confused with lack of demand for ATG services. The market potential for *affordable, good quality* air-ground services is enormous,

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5/ *See infra* at 10. *See also* AirCell, Inc., Petition, Pursuant to Section 7 of the Act, for a Waiver of the Airborne Cellular Rule, Or, in the Alternative, for a Declaratory Ruling, *Memorandum Opinion and Order,* 15 FCC Rcd 9622 (2000); *AT&T Wireless Services, Inc., et al., v. FCC,* 270 F. 3d 959 (D.C. Cir. 2001), *Order on Remand,* FCC 02-324 (rel. Feb. 10, 2003) (reaffirming the Commission's earlier decision); AirCell, Inc., Petition, Pursuant to Section 7 of the Act, for a Waiver of the Airborne Cellular Rule, Or, in the Alternative, for a Declaratory Ruling, *Order*, 17 FCC Rcd 8258 (WTB 2002) (extending the original waiver grant).

6/ NPRM at ¶ 17.

7/ *See* NPRM at ¶ 20.

as the airlines transport some 600 million passengers per year within the U.S. With the growing penetration of terrestrial wireless services, consumers have come to rely on the ability to communicate anywhere, anytime. Increasingly, they are also coming to expect wireless data capabilities and, with the on-going deployment of 802.11 access points, will soon become accustomed to wireless local area network access. Indeed, the airline industry as well as the FAA have recognized the growing public demand for greater use of personal electronic devices, including mobile phones, while airborne. As the NPRM noted, the RTCA advisory group, in which AirCell is an active participant, is currently studying this issue and is expected to issue a report to the FAA in late 2005.

Moreover, it became clear two years ago during the September 11 disaster that in-flight communications capabilities are more than a mere convenience; they are a public safety necessity. The Department of Homeland Security, for example, has identified a need for "mission critical" airborne communications ability and will likely need to rely on commercially-available infrastructure in implementing such a system. Air-ground communications can play a key role in other air safety initiatives as well, such as providing video links to ground personnel to show activities in a plane's cockpit and passenger cabin. Today's much stricter security environment onboard aircraft – which involves cockpit doors that must remain locked – also means that crew and passengers need

a new communications option in cases of medical emergencies, given that access to cockpit communications equipment is no longer available.8/

The demand for air-ground service is not being met by satellite-based services which, like the Airfone service, suffer from high costs – as much as $10 per minute – that put it outside the reach of most passengers.9/ Moreover, even if prices were reduced, satellite networks have dramatically less channel capacity than terrestrial networks, meaning that they would be able to satisfy only a small portion of the demand for airborne passenger communications. Availability is also restricted by the fact that installation of the handsets, specialized equipment and antenna on each aircraft for a satellite system can cost $500,000 to $1 million, which has led airlines to limit the installation of the equipment to aircraft flying trans-oceanic routes. As AirCell has demonstrated in the general aviation market, a terrestrial based system can provide the lowest cost per cubic mile of coverage.

Thus, given the growing and critical demand for air-ground services, the Commission should not open the band to terrestrial uses. Once a new licensing framework is in place that can provide for affordable, better quality

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8/ Earlier this year, AirCell announced that it has teamed up with MedAire, Inc. to provide better access to MedAire's ground-based physicians who provide advice to in-flight crew members and passengers in managing airborne medical emergencies.

9/ While satellite services provided by Iridium and Globalstar are priced lower, these companies have gone through bankruptcy proceedings, resulting in the ability to price their services at levels that do not reflect the true cost of their assets and technology development.

communications,10/ AirCell fully expects that the ATG band will be actively and efficiently utilized. There are already hundreds of megahertz of spectrum devoted to terrestrial use, with more spectrum being allocated for third generation services. By contrast, a four megahertz band is a very small amount of spectrum relative to the size of the potential ATG market. With an attractive service offering, the band may well become over-crowded with air-ground use alone, without the additional capacity constraint that would result from permitting terrestrial use.11/ (It may be possible, however, to permit certain ancillary terrestrial uses, as well as very low power uses that do not impact air-ground service capacity.)

Finally, the need to preserve the integrity of the ATG band also means that no changes should be made in the neighboring bands that could adversely impact current or future air-ground operations. The NPRM notes that some proposals raised in the on-going 800 MHz proceeding contemplate the relocation of public safety users to the 851-854 MHz band, thereby "raising additional questions about possible interference to be considered in evaluating any proposals regarding use of the [ATG band]."12/ It is important to note that, for the reasons discussed above, air-ground services are also very much "public safety" services, particularly in light of the national priority placed on increasing aviation security. Thus, the

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10/ See discussion *infra* at section III.

11/ Moreover, as the Commission notes, permitting flexibility to provide terrestrial services would require a change in the current domestic aeronautical mobile allocation for the band, and certain bilateral agreements with Canada and Mexico could limit operational flexibility. *See* NPRM at ¶ 21.

12/ NPRM at n.54.

Commission should fully protect the ATG band and not assign greater interference protection rights to the 851-854 MHz band than to the 849-851 MHz band.

## III. THE COMMISSION SHOULD MODIFY ITS RULES TO ACCOMMODATE NEW TECHNOLOGIES AND COMPETITION IN THE BAND; AIRCELL IS WELL-SUITED AS A POSSIBLE ENTRANT

### A. Significant Rule Changes Are Needed, But Only After Technical Feasibilities Are Studied and Known; The Commission Should Make No Changes that Further Entrench the Incumbent

As the Commission stated in the NPRM, "rigid service rules adopted to promote six licensees and that significantly delimit the permissible spectrum usage seem at least suspect when significantly fewer than six service providers appear viable."13/ The current rules governing the ATG band simply make it impossible to offer a high quality, affordable service. The experiences of former licensees Claircom and In-Flight Phone are cases in point, with each company having invested hundreds of millions of dollars in developing and installing customized equipment for a dedicated network that could not deliver a consumer-acceptable service. Specifically, the current rules only provide for narrow bandwidth channels, which severely limits both voice quality and data rates. Moreover, the rules make necessary the use of heavy and expensive (to install and to carry) dedicated equipment, both on the ground and in the air. Airfone's seatback solution, for example, adds considerable cost as well as hundreds of pounds to the aircraft, which results in greater fuel consumption.

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13/ NPRM at ¶ 18.

The Commission should revise the ATG service rules in a manner that permits greater operational flexibility in order to accommodate new technologies and new services, including higher quality digital service. In its review, the Commission will need to consider the implications of using various digital modulations, including CDMA, which uses spectrum most efficiently but requires a 1.25 MHz frequency block in each transmission direction. AirCell has recently obtained an experimental license and has begun testing that will focus on digital solutions that could improve upon its existing analog services in the cellular bands. The information obtained from this testing could equally be applied to operations in the adjacent ATG band. AirCell notes that Airfone earlier this month also obtained an experimental license to conduct digital testing. Until experimentation is complete, it will not be clear what type of systems will be technically feasible in the ATG band. Therefore, it would be premature for the Commission to formulate new service rules for the band at this time. Moreover, it is critically important that the Commission make no rule revisions that would promote the further entrenchment in the band of the current incumbent, at the expense of potential new entrants or technologies. The ATG band must be preserved in a way that will permit increased competition once the most appropriate technology is available.

In addition to technical feasibility, the Commission should also be cognizant of economic feasibility as it considers restructuring the ATG service rules. As explained above, the band will not become efficiently used unless the service appeals to consumers in terms of both quality *and* price. Greater freedom to utilize

new technologies could reduce costs to levels acceptable to a vast majority of potential users. Moreover, the most economical systems are those that can leverage to the greatest extent possible existing communications infrastructure, such as the terrestrial wireless networks in which billions of dollars have already been invested. Ideally, the ultimate leveraged airborne solution would involve the use of the same mobile handsets that most passengers are already carrying with them in the airplane cabin. This would eliminate the costs of designing and manufacturing dedicated airborne handsets, the costs of installing those handsets in aircraft, and the fuel-related costs of carrying the additional weight of those handsets.

Furthermore, the ATG rules reflect outdated, rigid spectrum policies that are inconsistent with the Commission's new spectrum policy direction. Specifically, the Commission needs to ensure that the ATG rules reflect the "key elements of new spectrum policy,"14/ including maximizing flexibility of use, promoting efficiency, and defining spectrum rights and responsibilities. Therefore, both practical realities and policy concerns support modification of the current ATG rules.

### B. AirCell Would Be Well Suited to Provide Service in a Restructured ATG Band

AirCell is a good example of a service provider that takes advantage of existing infrastructure to provide an affordable service. AirCell's current system uses special low-power, FAA-approved cellular terminals owned by AirCell's

14/ *See* Spectrum Policy Task Force Report, ET Docket No. 02-135 (rel. Nov. 15, 2002) at 15-16.

customers, in conjunction with AirCell base station components collocated at cell sites of licensed cellular carriers.15/ This configuration permits AirCell to use (on a resale basis) cellular spectrum to provide a competitive alternative to licensed Part 22 general and commercial aviation air-ground services. By relying largely on existing cellular network infrastructure, AirCell is able to price its calls as low as $0.99 per minute, compared to $3.99 per minute charged by Airfone in the ATG band.

Given the economic efficiencies it has been able to achieve through years of experience and substantial investments in technology, AirCell would be a logical licensee or user of a restructured ATG band. With appropriately modified rules, AirCell believes that the ATG band could provide a good "home" in which to relocate and/or expand its service, while maintaining the efficiencies gained by leveraging the infrastructure of its cellular partners.16/

15/ AirCell's ground sites are typically located in rural areas, where ample spectrum is generally available. Thus, the AirCell model provides for the efficient use of spectrum while providing an additional source of revenue for rural cellular operators.

16/ As an ATG band licensee (as opposed to a cellular reseller), AirCell would still rely on its cellular partners' infrastructure for tower collocation, backhaul, switching, etc.

## IV. SECTION 22.925 SHOULD BE MODIFIED BUT NOT DISCARDED

The NPRM asks whether the prohibition, contained in Section 22.925 of the Commission's rules, against the use of cellular equipment while airborne should be repealed or modified.17/ As noted above, AirCell has vast experience in air-ground operations. In developing its system over the past 10+ years, it has obtained considerable expertise on the interference potential of ordinary airborne cellular handsets on terrestrial networks. AirCell's own testing, in addition to independent studies, indicates that ordinary, fully-powered handsets do cause interference when used in-flight. Indeed, AirCell has gone to considerable lengths to develop its specially modified equipment to ensure that its mobile units will not cause harmful interference. Based on their filings in the AirCell proceeding, the major cellular carriers are also convinced that airborne cellular operations can cause harmful interference. Thus, outright repeal of the rule would not be in the public interest and could jeopardize terrestrial cellular operations. Furthermore, because the Commission is the only agency with the expertise and jurisdiction to ensure that terrestrial cellular licensees are protected from harmful interference, it should not abdicate this role to agencies such as the FAA with different organizational missions.

The Commission is correct, however, that there are technological means of enabling the operation of standard cellular handsets at low, non-interfering power levels while on-board an aircraft. AirCell has conducted

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17/ *See* NPRM at ¶ 22 (citing 47 C.F.R. § 22.925).

successful testing in this regard, as have other companies. Therefore, the rule should be modified to permit the airborne use of cellular handsets so long as they are modified or controlled in a manner that ensures against harmful interference to the terrestrial network.18/ This should help to promote the development of new technologies and services that, like AirCell's current operations, efficiently reuse spectrum to provide air-ground communications, while still protecting the terrestrial networks.

Finally, the NPRM notes that there is no prohibition on the airborne use of PCS handsets and only limited restrictions on the use of Specialized Mobile Radio handsets.19/ Although it may be beyond the scope of this proceeding, the Commission should consider whether a rule equivalent to the modified version of Section 22.925 suggested above would be appropriate for these services as well. Although AirCell has not conducted tests in these service bands, it believes that a significant interference potential from airborne operations is present. The Commission's rules should not discriminate among wireless services, absent a technical justification for doing so.

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18/ Airlines could be given greater flexibility to control the RF environment of their planes, including the ability to "power down" mobile phones that could cause interference if used while airborne. The RTCA study is specifically looking at various options in this regard.

19/ *See* NPRM at ¶ 11.

## CONCLUSION

The Commission is to be commended for its foresight in commencing this proceeding to develop a new regulatory framework for air-ground services. Although any detailed changes to the ATG service rules would be premature until interested parties have more time to evaluate the technical feasibility of various options, it is clear that the ATG band should be maintained for exclusive air-ground use, and that Section 22.925 should be modified to permit the airborne use of non-interfering handsets.

Respectfully submitted,

**AIRCELL, INC.**

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